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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,462	02/12/2004	Oswald Kuwert	HOE-802	2263
20028	7590	08/31/2005	EXAMINER	
Lipsitz & McAllister, LLC 755 MAIN STREET MONROE, CT 06468			NGUYEN, TRAN N	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 08/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/777,462	KUWERT, OSWALD	
	Examiner	Art Unit	
	Tran N. Nguyen	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 18-49 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 50 is/are allowed.
- 6) ☒ Claim(s) 1-17 and 50 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED OFFICE ACTION

Election for Restriction

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- (I) **Claims 1-17** are drawn to a permanent magnet rotor structure classified in class 310.
- (II) **Claims 18-49** are drawn to method of making a molded rotor, classified in class 264.

The applicant selected claims 1-17 on 8/15/05 without traverse. Claims 18-49 have been withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1, 4-5, 11-12, 16, 17** are rejected under 35 U.S.C. 102(b) as being fully anticipated by **Ward et al (US 5221503)**.

Ward discloses a brushless electric motor comprising:

a rotor, which is mounted rotatably in relation to a stator, wherein a stator and pole elements are inherently essential part of the motor;

said rotor (10) comprises magnet poles (unnumbered N-S pole in fig 1) of magnetic powder material bonded to form a body (16) and a back yoke body (14) carrying the magnet poles, wherein the magnet poles being formed by at least one molded magnetic body (16) on the back yoke body (14);

wherein

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regarding claim 4, the at least one molded magnetic body (16) forms an annular body which is molded onto the back yoke body (14) (fig 1);

regarding claim 5, the at least one molded magnetic body (16) butts against the back yoke body (14) in an azimuthally closed manner;

regarding claims 11 and 17, back yoke body (14) is formed from molded powder material, particularly a plastic bonded ferromagnetic material, as a molded back yoke body;

regarding claim 12, the molded back yoke body (14) is molded onto a carrier body (12) of the rotor.

2. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being fully anticipated by **Itaya (US 5500994)**.

Itaya discloses a brushless electric motor comprising:

a rotor that is mounted rotatably in relation to a stator,

a stator and its pole elements (fig 1);

said rotor comprises magnet poles of magnetic powder material bonded to form a body (32) and a back yoke body (31) carrying the magnet poles, wherein the magnet poles being formed by at least one molded magnetic body (32) on the back yoke body (31);

wherein

regarding claim 2, the back yoke body (31) has positively connecting elements, onto which the at least one molded magnetic body is molded, i.e., rotor body (31) with corrugations provided at its outer circumferential surface (32) for engaging with the magnetic molded body (30) (figs 5 or fig 10);

regarding claim 3, the positively connecting elements (36b) are effective in the radial direction adaptively in terms of positive engagement;

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regarding claim 4, the at least one molded magnetic body (16) forms an annular body which is molded onto the back yoke body (14) (fig 1);

regarding claim 5, the at least one molded magnetic body (16) butts against the back yoke body (14) in an azimuthally closed manner.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 6, 11-12, 14-15 and 50 are rejected under 35 U.S.C. 102(b) as being fully anticipated by **Reiter, Jr. et al (US 6889419)**.

Reiter discloses a brushless electric motor (figs 1-2A, 6A-b, 7A-B) comprising:

a rotor, which is mounted rotatably in relation to a stator, wherein a stator and pole elements are inherently essential part of the motor;

said rotor comprises magnet poles (20, 64a) of magnetic powder material sinter bonded to form a body and a back yoke body (16, 66a) carrying the magnet poles, wherein the magnet poles being formed by at least one molded magnetic body (20, 64a, 74) on the back yoke body (16, 66a, 72);

wherein

the back yoke body (14) is formed from molded powder material, particularly a molded magnetic body is a green magnetic body sintering material bonded body and the back yoke body is a green magnetic body sintering material bonded body;

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the back yoke body with region carrying the molded magnetic body is a molding part of the region that is not formed by molded magnetic body (figs 1-2A, 6A-b, 7A-B);

the molded back yoke body (14) is molded onto a carrier body (14) of the rotor.

Regarding the method claimed language such as "molding part of a mold that is lost during the molding of the at least one molded magnetic body" (in claim 6) and "formed by sintering from the green magnetic body molded onto a back yoke body" (as in claim 50), the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, these recitations are not given any patentable weight.

A "product by process" claim is directed to the product per se, no matter how actually made, *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmimn*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 7, 8-10, and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ward, or Itaya, or Reiter, Jr.**, as applied in the base claim, in view of level of ordinary skills of a worker in the art.

Each of the refs: Ward, or Itaya, or Reiter, Jr. discloses the claimed invention, except for the added limitations of claims 7-10, and 13.

Regarding the limitations claim 7 recites that the back yoke body and the magnetic molded body has thermal expansion properties of the same order of magnitude. Those skilled in the art would understand that unpreferable stresses resulting from any combination of sources, including: (1) magnetic and mechanical forces occurs in the rotor during the operation of the electric motor; (2) mechanical stresses resulting from mechanical abutment between the rotor back yoke and the magnetic body; or (3) internal stresses caused by the thermal expansion and/or the expansion due to magnetic saturation of the different magnetic materials. To avoid potential damage to the structure of the rotor due to stresses that generated by thermal expansion during the motor operation, it would have been obvious to an artisan to select a suitable materials for the back yoke body and the magnetic body so that both materials would have similar thermal expansion properties.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the disclosed rotor's by selecting suitable materials that have similar thermal expansion properties of the same order of magnitude to form the back yoke body and the

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magnetic body. Doing so would minimize the stresses due to thermal expansion of the rotor's back yoke body and the magnetic body would not cause potential damage to the structure integrity of the rotor. Furthermore, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding the limitations claims 8-10 recite yoke body is produced from different material such as solid steel, one-piece steel body, or stack of metal laminations. Those skilled in the art would understand that rotor back yoke, i.e., rotor core, formed as solid body or laminated body is both well known in the art.

In permanent magnet rotors, typically the rotor back yokes, i.e., the rotor cores, are constructed of a generally cylindrical magnetic core, which may be one of solid or laminated and sintered metal constructed body, based upon the engineering design choice. This is because the solid steel, or one-piece steel body would provide super structural integrity, but the core is formed of a solid material, high eddy current is generated when current flows through the coil to impart the magnetic flux to the core. A further problem occurs wherein electric power applied to the coil is wastefully consumed for said heat generation. On the other hand, laminated core or sintered core would reduce the eddy current but relatively more expensive to fabricate and the structural integrity of the core could be compromised.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the disclosed rotor's back yoke as either solid one-piece steel body or stack of metal laminated body, as claimed, because this would be an obvious engineering design choice based upon a particular industrial application of the motor since both solid one-piece or laminated back yoke rotor bodies are well known in the art.

Regarding claim 13 that recites the rotor carrier, i.e., the rotor shaft, is a one-piece steel body. It would have been obvious to one having ordinary skill in the art at the time the invention

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was made to select steel as the material for the rotor carrier body. Doing so would enhance the rotatably mechanical support of the rotor carrier for the rotor body during rotation. Also, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

5. Claims*** are rejected under 35 U.S.C. 103(a) as being unpatentable over *** and **, as applied in the rejection against the base claim, and further in view of ***

The combination of ** and *** refs substantially discloses the claimed invention, except for the added limitations of

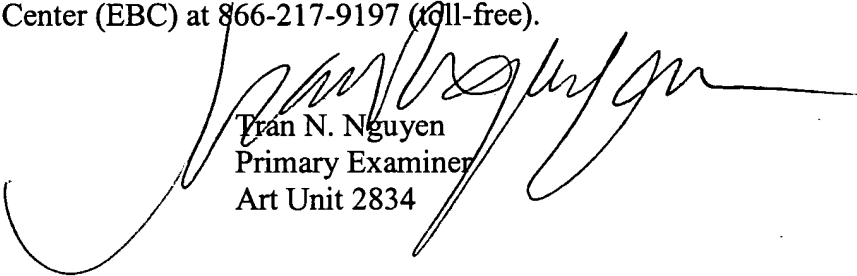
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N. Nguyen whose telephone number is (571) 272-2030. The examiner can normally be reached on M-F 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tran N. Nguyen
Primary Examiner
Art Unit 2834